REMARKS

Claims 17-20 have been added so that claims 1-20 are now in the application.

Claims 1, 2, 4, 5, 7, 8, 11, 12, 14 and 15 were rejected under 35 USC 102(b) as being anticipated by Santini (US Pat. 6,104,576). Amended claim 1 is distinguished over Santini by reciting:

> "the pole tip portion of the first pole piece having non-overlapping first and second components wherein the first component forms a portion of the ABS and the second component is recessed from the ABS and is magnetically connected to the first component;"

This structure is shown in Figs. 15-18 wherein the second component 204 does not overlap the first component (P1HF) and has a width which is less than the width of the first component. In contrast, the second component 208 in Fig. 18 of Santini overlaps the first component 206. As shown in Figs. 23 and 24 of Applicants' drawings, the second component behind the first component (P1HF) has a low permeability when the head is writing at high frequency, and as shown in Fig. 24, the second component behind the first component (P1HF) has a high permeability when the write head is writing at a low frequency. This causes the throat height to vary from P1HF in Fig. 23 at high frequency to P1LF at low frequency, as shown in Fig. 24. This is described in more detail from page 12, line 26 to page 13, line 17 of Applicants' specification wherein it is stated:

> "Figs. 23 and 24 show the present write head which has a frequency dependent variable throat because of the first and second components 202 and 204. At high frequency operation, as illustrated in Fig. 23, the effective throat height is P1HF with the second component 204 having a low permeability due to the high frequency operation. Two flux lines are shown bridging the gap for implementing high data rate operation while one flux line is shunted to the first component 202 because the first component 202 still has a relatively high permeability compared to the second component 204. It should be noted that the first component 202 will have a relatively high permeability regardless of whether the write head writes at high or low frequency because of the largeness of the first component 202. The write head in Fig. 24 is the same as the write head in Fig. 23 except the write head in Fig. 24 is operating at low frequency. During low frequency operation the

effective throat height is P1LF. Because of the low frequency operation the second pole piece layer 94 now conducts four flux lines due to increased permeability. However, because at low frequencies the permeability of the second component 204 is also increased two flux lines are now shunted to the first and second components 202 and 204, which is one more than that shown in Fig. 23, and the same two flux lines bridge across the gap for writing hard field signals into the circular track of the rotating magnetic disk in the same manner as that shown in Fig. 23. Accordingly, the present invention enables a high data rate write head to write strong field signals into the circular disk of the rotating magnetic disk without causing erase bands or adjacent track interference (ATI) on each side of the track being written. This is possible because the throat height in the present invention varies as a function of the frequency of the write signal of the write head."

Because of the overlapping of Santini's second component 208 with respect to the first component 206, as shown in Fig. 18 of Santini, there is no variable frequency of Santini's write head when the write frequency of the write head varies between a high frequency and a low frequency, as shown in Figs. 23 and 24 of Applicants' drawings. In Santini's write head the pole tip progressively becomes wider with no constriction, which constriction is required for the operation of Applicants' invention. Claims 7 and 11 have been amended in the same manner as claim 1 and are considered to be patentable over Santini for the same reasons as given in support for claim 1. Claims dependent upon claims 1, 7 and 11 are considered to be patentable over Santini for the same reasons as given in support for claims 1, 7 and 11.

The Examiner indicated the allowability of claims 3, 6, 9, 10, 13 and 16 if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 3, 6, 9, 13 and 16 have been rewritten in independent form to include all the limitations of the base claim and the intervening claims and should now be in condition for allowance. Claim 10 is dependent upon claim 9 and should also be in condition for allowance. In rewriting these claims obvious errors have been corrected such as the phrase "major thin film planes of the layers of the sensor" has been changed to --a major plane of the write gap layer--.

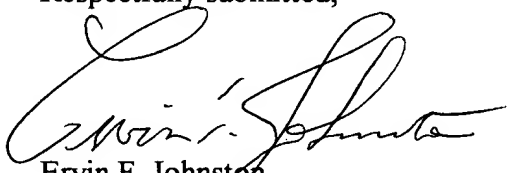
New claims 17-20 have been added to the application. Claim 17 is distinguished over Santini by reciting:

> "the pole tip portion having a reduced cross-section portion wherein the reduced cross-section portion is located entirely within a region which is recessed from said head surface."

This structure is shown in Figs. 15-18 wherein the pole tip portion 200 has a reduced cross-section portion 204 wherein the reduced cross-section portion is located entirely within a region which is recessed from the head surface (ABS). In contrast, the write head of Santini in Fig. 18 does not have a reduced cross-section behind his ABS. Claims 18, 19 and 20 recite the same limitation as claim 17 and are considered to be patentable over Santini for the same reasons as given in support for claim 17.

Should the Examiner have any questions regarding this document he is respectfully requested to contact the undersigned.

Respectfully submitted,



By: Ervin F. Johnston
Attorney for Applicant(s)
Registration No. 20,190
Telephone: 619-334-5883
Fax: 619-448-1904